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Station  
  
Bozeman,  
Montana

# MONTANA WATER SUPPLY OUTLOOK

## Snowpack and Streamflow Forecasts as of May 15, 1985



UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
SNOW SURVEY UNIT  
  
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### Water supply outlook deteriorates

Water supply outlook continues to deteriorate throughout the state. Mountain precipitation was well below average for the first half of May with most mountain sites reporting less than 1 inch of moisture. Also, snowmelt was above average due to prolonged periods of warm temperatures, and present snowpack varies from below average to no snow.

It appears that the temperature/melt/runoff sequence is 2 to 3 weeks earlier than normal. The combination of these factors with the winter's low snowpack indicates potential for severe water shortages this summer across the southern part of the state and minor to severe shortages in the more northern drainages. The most significant unknown factor at this time is the amount of precipitation that will occur in the last half of May and June.

Normally, May and June are large precipitation months. However, recent weather patterns have been warm and dry. If the warm and dry trend continues, demand for water will exceed the supply in many areas. If weather patterns become wetter, it would help relieve some shortages.

Even with near average precipitation, it could be a long summer for irrigators and other water users.

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The Montana Water Supply Outlook is a publication of the U. S. Soil Conservation Service. The SCS administers the Cooperative Snow Survey Program in cooperation with other federal, state and private agencies, organizations, and individuals.

The report is prepared by SCS, Snow Survey and Water Supply Forecast Staff, Room 443, Federal Building, 10 East Babcock, Bozeman, Montana.



### Early snowmelt peaks expected

Streams began rising in early May but receded during cold weather around May 11-12. They are now on the rise again and are all expected to have reached their peak snowmelt runoff by the end of May. This is 2 to 3 weeks earlier than normal.

In the Missouri River headwaters, the Beaverhead and Ruby Rivers are figured to peak around May 20. The Big Hole should peak a couple of days later. The Madison, Gallatin and Missouri Rivers are forecast to peak about May 24 or 25.

In the Yellowstone River drainage, most major tributaries and the Yellowstone River above Billings are projected to peak the last few days in May.

West of the Divide, the Clark Fork and Blackfoot should peak about May 23 or 24, with the Bitterroot peaking a couple of days later. Major tributaries to the Flathead River are expected to reach their peak snowmelt runoff around May 28 or 29.

Most smaller streams with low elevation headwaters have already passed their peak snowmelt runoff and are receding.



In many areas, snow exists only in the shaded or drifted areas on north and east facing slopes.





# SNOW SURVEY DATA

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-80
MONTANA						
BADGER PASS BUTYL	6900	5/15/85	---	26.2	13.4	38.4
BANFIELD MOUNTAIN	5600	5/13/85	25	12.1	6.3	15.1
BANFIELD MTN BUTYL	5600	5/15/85	---	9.3	7.2	12.3
BARRE CREEK	5500	5/15/85	58	32.5	30.2	39.9
BARRE HIGHWAY	4600	5/15/85	43	22.1	14.5	22.9
BARRE TRAIL	3800	5/15/85	0	.0	.0	.0
BARKEP LAKES BUTYL	8250	5/15/85	---	10.8	16.4	16.2
BASIN CREEK METAL	7180	5/15/85	---	1.7	11.2	8.4
BEAGLE SPGS METAL	8850	5/15/85	---	.0	10.8	7.4
BLACK BEAR BUTYL	7950	5/15/85	---	27.7	36.0	35.3
BLACK PINE BUTYL	7100	5/15/85	---	.0	9.4	11.5
BLOODY DICK BUTYL	7550	5/15/85	---	.0	8.2	6.0
BOTS SOTS	7750	5/13/85	0	.0	14.7	7.6
BOULDER MTN BUTYL	7950	5/15/85	---	8.6	23.4	19.9
BOX CANYON METAL	6700	5/15/85	---	.0	.0	2.1
BRIDGER BOHL	7250	5/15/85	26	10.8	30.0	29.5
BRIDGER BOHL BUTYL	7250	5/15/85	---	8.1	29.5	27.2
CALVERT CREEK BUTYL	6430	5/15/85	---	.0	.0	.1
CAMP SENIA	7890	5/13/85	1	.3	17.6	9.7
CARROT BASIN BUTYL	9000	5/15/85	---	17.3	27.8	32.9
CASHE CREEK METAL	7800	5/15/85	---	.0	9.1	7.5
CLOVER MEADOW METAL	8800	5/15/85	---	7.2	23.7	17.6
COLE CREEK	7850	5/14/85	19	4.8	26.7	24.4
COLE CREEK BUTYL	7850	5/15/85	---	6.1	26.1	19.0
COMBINATION BUTYL	5600	5/15/85	---	.0	.0	.7
COPPER BOTTOM BUTYL	5200	5/15/85	---	.0	.0	1.7
COPPER CAMP BUTYL	6950	5/15/85	---	19.2	19.7	30.0
COPPER MOUNTAIN	7700	5/14/85	0	.0	8.9	9.0
CRYSTAL LAKE METAL	6050	5/15/85	---	6.9	12.4	7.9
DALY CREEK METAL	5780	5/15/85	---	.0	.0	3.7
DARKHORSE LN. METAL	8700	5/15/85	---	14.6	28.3	30.7
DEADMAN CREEK	6450	5/15/85	0	.0	--	4.3
DEADMAN CREEK BUTYL	6450	5/15/85	---	.0	.5	3.2
DIVIDE BUTYL	7800	5/15/85	---	1.0	13.0	8.1
DUPUYER CREEK BUTYL	5750	5/15/85	---	.8	.6	--
EAST BOULDER S	9250	5/14/85	53	22.0	30.0	33.5
EMERY CREEK BUTYL	4350	5/15/85	---	.8	.7	1.4
FISHER CREEK BUTYL	9100	5/15/85	---	26.1	30.7	39.6
FLATTOP MTN BUTYL	6300	5/15/85	---	31.2	34.6	49.6
FROHMER MOWS BUTYL	6480	5/15/85	---	.0	6.0	5.4
GARVER CREEK	1250	5/13/85	0	.0	.0	.3
GARVER CREEK BUTYL	4250	5/15/85	---	.0	.0	2.7
GIBBONS PASS	7100	5/16/85	12	6.2	22.0	19.9
GRAVE CREEK	4300	5/13/85	7	3.8	.0	7.8
GRAVE CRK BUTYL	4300	5/15/85	---	4.3	.0	2.1
HAND CREEK	5030	5/16/85	4	1.5	--	--
HAND CREEK BUTYL	5030	5/15/85	---	1.9	3.4	3.5
HAWKINS LAKE	6450	5/13/85	58	27.1	22.7	30.4
HAWKINS LAKE BUTYL	6450	5/15/85	---	23.1	21.8	30.9
HEART LAKE TRAIL	4800	5/15/85	30	14.2	--	11.2
HELL ROARING DIVIDE	5770	5/16/85	41	19.6	23.1	24.9
HOOODD BASIN	6050	5/15/85	84	43.9	42.0	50.1
HOOODD BASIN BUTYL	6050	5/15/85	---	38.7	36.5	41.9
HOOODD CREEK	5900	5/15/85	80	42.4	38.6	46.0

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-80
INTERGAARD	6450	5/14/85	0	.0	5.7	6.2
KINGS HILL	7500	5/15/85	20	7.8	12.0	15.2
KRAFT CREEK METAL	4750	5/15/85	---	.0	.0	2.2
LAKEVIEW ROG. METAL	7400	5/15/85	---	.0	5.3	4.4
LEMMI RIDGE BUTYL	8100	5/15/85	---	.0	11.9	8.2
LICK CREEK	6860	5/15/85	0	.0	12.8	6.2
LICK CREEK BUTYL	6860	5/15/85	---	.0	8.3	4.6
LOWER THIN METAL	7900	5/15/85	---	11.4	26.7	22.9
LUBRECHT FLUME BUTYL	4680	5/15/85	---	.0	.0	.0
MANY GLACIER BUTYL	4900	5/15/85	---	.0	.0	1.8
MAYNARD CREEK	6210	5/15/85	1	.5	12.2	12.4
MAYNARD CREEK BUTYL	6210	5/15/85	---	4.0	13.1	12.0
MONUMENT PEAK METAL	8850	5/15/85	---	15.2	19.6	30.2
MT LOCKHART BUTYL	6400	5/15/85	---	14.6	13.5	21.5
MULE CREEK METAL	8300	5/15/85	---	10.8	15.1	17.0
NEVADA CREEK METAL	6480	5/15/85	---	6.6	5.7	10.2
NEZ PERCE CWP BUTYL	5650	5/15/85	---	1.1	8.1	5.1
NOISY BASIN BUTYL	6040	5/15/85	---	40.6	55.6	40.4
N.FORK ELK CRK BUTYL	6250	5/15/85	---	.0	4.6	4.8
N.E. ENTRANCE BUTYL	7350	5/15/85	---	.0	.8	1.5
PICKET PIN O	9450	5/14/85	29	11.5	30.5	30.3
PICKFOOT CRK METAL	6650	5/15/85	---	.0	.0	4.7
PIKE CREEK BUTYL	5930	5/15/85	---	18.9	14.8	20.9
PLACER BASIN F	8830	5/14/85	27	11.0	24.0	23.9
PLACER BASIN METAL	8830	5/15/85	---	8.5	21.2	21.5
POORMAN CREEK	5100	5/13/85	47	24.5	18.6	22.6
POORMAN CRK BUTYL	5100	5/15/85	---	24.7	17.3	23.3
PORCUPINE BUTYL	6500	5/15/85	---	.0	1.6	.4
RED MOUNTAIN	6000	5/16/85	12	5.3	10.6	15.0
ROCKER PEAK BUTYL	8000	5/15/85	---	9.8	12.7	18.6
SADDLE MTN BUTYL	7900	5/15/85	---	14.2	20.2	26.8
SHOWER FALLS BUTYL	8100	5/15/85	---	14.8	34.7	29.0
SILVER RUN	6630	5/13/85	0	.0	5.3	2.2
SILVER RUN BUTYL	6630	5/15/85	---	.0	.4	.0
SHALIMHO SUMMIT BYTL	7260	5/15/85	---	17.0	19.8	25.8
SKYLARK TRAIL METAL	6200	5/15/85	---	18.6	25.9	29.7
S.FK. SHIELDS BUTYL	8100	5/15/85	---	6.4	25.1	19.1
SPUR PARK BUTYL	8100	5/15/85	---	17.7	21.8	23.0
STAHL PEAK	6030	5/13/85	76	39.1	36.0	40.6
STAHL PEAK BUTYL	6030	5/15/85	---	33.7	33.1	37.2
STAR LAKE E	9650	5/14/85	69	30.5	39.5	52.0
TEPEE CREEK BUTYL	8000	5/15/85	---	3.6	14.8	11.5
TIMBERLINE CREEK	8850	5/13/85	26	7.3	22.2	18.7
TWELVEMILE BUTYL	5600	5/15/85	---	.0	3.4	6.4
TWIN LAKES BUTYL	6400	5/15/85	---	28.9	34.3	38.7
WALDORN BUTYL	5600	5/15/85	---	.0	.0	3.2
WARM SPRINGS BUTYL	7800	5/15/85	---	13.7	24.8	27.5
WEASEL DIVIDE	5450	5/13/85	61	32.6	21.2	30.8
WEST YELL ST BUTYL	6700	5/15/85	---	.0	--	1.9
WHISKEY CREEK BUTYL	6800	5/15/85	---	8.3	10.4	9.7
WHITE HILL BUTYL	8700	5/15/85	---	19.5	23.0	25.1
WOOD CREEK METAL	5960	5/15/85	---	.0	.0	7.0



Snowpacks are nearly melted in many alpine areas.

## AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

### GOVERNMENT AGENCIES

#### Canada

- Department of the Environment
  - Atmospheric Environment Service
  - Water Management Service
- British Columbia Ministry of Environment
  - Inventory and Engineering Branch, Hydrology Section
- Alberta Environment
  - Technical Services Division

#### Federal

- Department of the Army
  - Corps of Engineers
- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - National Environmental Satellite Service
  - National Weather Service
- Department of Interior
  - Bureau of Indian Affairs
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
  - Bureau of Reclamation
- Department of Energy
  - Bonneville Power Administration

### STATE AGENCIES

- Montana Conservation Districts
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana State University - Agricultural Experiment Station
- University of Montana - School of Forestry

### PRIVATE ORGANIZATIONS

- The Anaconda Company
- Big Sky of Montana
- Butte Water Company
- Flathead Valley Community College
- Montana Power Company
- Pondera County Canal & Reservoir Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.



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Forecasts as of  
May 1, 1985

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## Snowpack peaks and melt begins

Earlier than normal melt has reduced snowpacks statewide. Very few snow courses showed increases in the water content from April 1 to May 1. Usually, all high elevation snow courses and many mid-elevation sites increase during April.

Most snow pillow sites show the season's maximum water content was reached the first week in April.

Presently, snowpack in the northern half of the state is 70 to 90 percent of average while the southern part is only 50 to 70 percent of average. A few snow courses in the southern part the state have minimum or near minimum of record May 1 snow water content. Many low elevation snow courses report no snow.

It appears this season's melt is 2 to 4 weeks ahead of normal.

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The report is prepared by SCS, Snow Survey and Water Supply Forecast Staff, Room 443, Federal Building, 10 East Babcock, Bozeman, Montana.



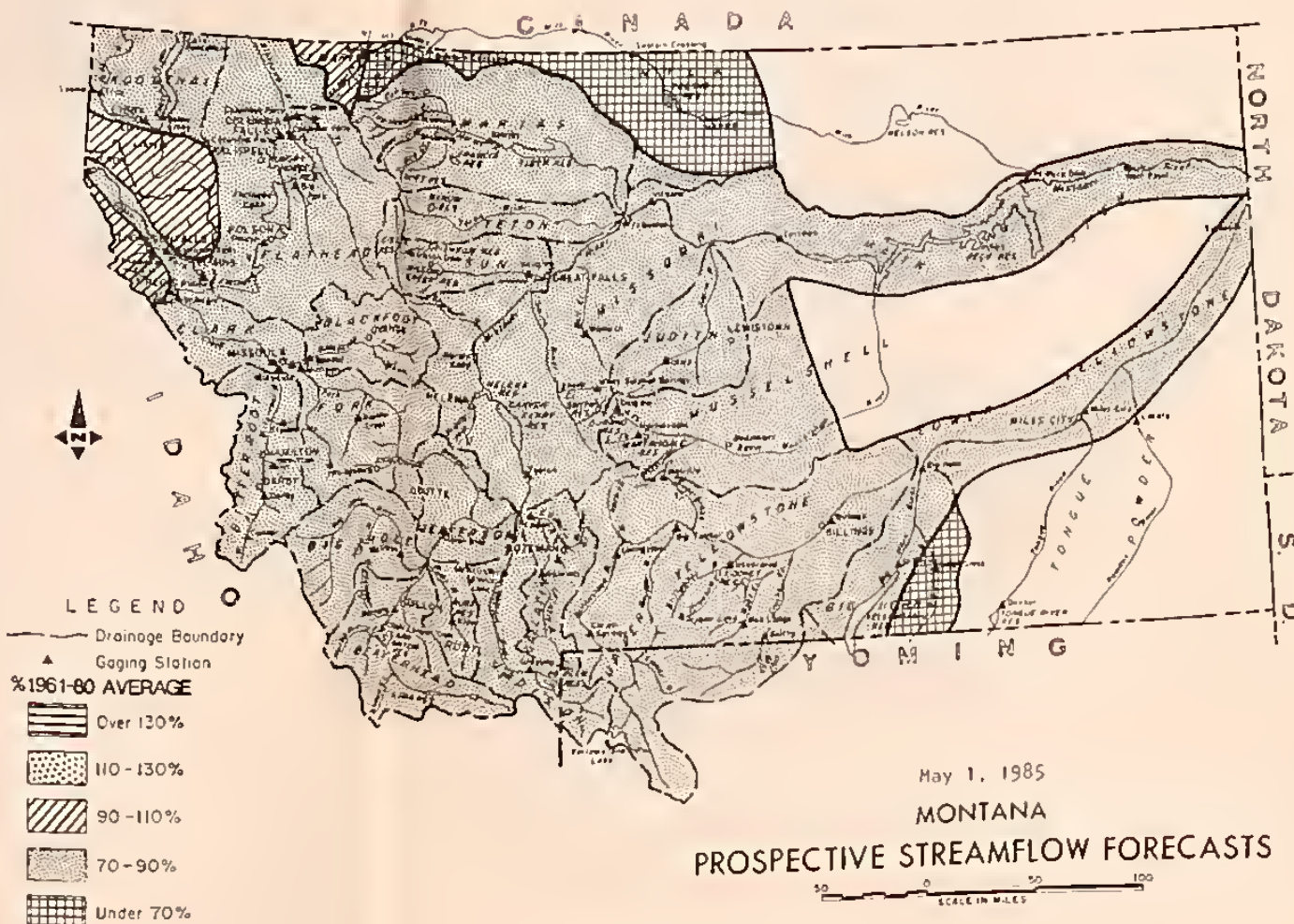
## Stream runoff begins early

All rivers and streams are forecast to have below average runoff for the May through September period. April runoff was generally average to above average.

Streamflow forecasts in the southern part of the state are generally in the 70 to 80 percent of average range. Streams further north are generally in the 80 to 90 percent range.

Soils are quite dry for this time of year.

Mid- to late season shortages of irrigation water are expected on many drainages.





# Missouri River & Hudson Bay Drainages

## STREAMFLOW FORECASTS

May 1, 1985

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD	
	FORECAST		FORECAST	
	THOUSAND ACRES-FT.	PERCENT OF AVERAGE	THOUSAND ACRES-FT.	PERCENT OF AVERAGE
PERIOD	MAY - SEPTEMBER		MAY - JULY	
RED ROCK RIVER near Monida (1)	64.5	80	80.7	60.5
BEAVERHEAD RIVER near Grant (2)	97.0	81	120	82.2
BEAVERHEAD RIVER at Barratts (2)	130	80	162	110
RUBY RIVER near Alder	79.0	76	91.6	57.5
BIG HOLE RIVER near Melrose	525	78	674	475
WILLOW CREEK near Harrison	13.5	77	17.5	12.0
MADISON RIVER near Grayling (3)	370	84	440	275
MADISON RIVER near McAllister (4)	620	83	743	465
GALLATIN RIVER near Gateway	400	78	514	335
SUM OF EAST+WEST FORKS HYALITE CR. nr Bozeman (5)	20.0	76	26.2	17.2
HYALITE CREEK near Bozeman (6)	32.0	76	42.0	27.2
GALLATIN RIVER at Logan	385	71	541	325
MISSOURI RIVER at Loston (7)	1,782	81	2,420	1480
SHEEP CREEK near White Sulphur Springs	17.2	85	20.2	15.0
SUN RIVER at Gibson Dam (8)	470	87	538	425
BELT CREEK near Monarch	100	80	126	92.7
MISSOURI RIVER at Fort Benton (9)	2,800	81	3,440	2,375
TWO MEDICINE CREEK near Browning (10)	197	89	222	187
BADGER CREEK near Browning	103	86	120	88.0
INFLOW SHIFTS RESERVOIR near Dupuyer	68.5	86	79.7	59.0
CUT BANK CREEK at Cut Bank	85.0	82	104	83.0
MARIAS RIVER near Shelby	375	79	473	360
MISSOURI RIVER at Virgelle (11)	3,190	81	3,740	2,770
MISSOURI RIVER near Landusky (11)	3,580	83	4,303	3,040
NORTH FORK MUSSELSHELL RIVER near Delpine	4.3	81	5.3	3.5
SOUTH FORK MUSSELSHELL RIVER above Martinsdale	44.5	79	56.5	42.2
MISSOURI RIVER below Fort Peck Dam (11)	3,495	82	4,244	3,010
MILK RIVER at Eastern Crossing	178	89	199	
MILK RIVER at Eastern Crossing (12)	27.7	50	55.4	
INFLOW LAKE SAKAKAWEA, ND (11)	8,360	77	10,855	7,475

## SASKATCHEWAN RIVER BASIN

SHIFTCURRENT CREEK at Sherburne (13)	114	94	121	98.8	95	104
ST. MARY'S RIVER near Babb (13)	432	93	485	370	94	394

## PEAK FLOWS (MAXIMUM MEAN DAILY Flow for 24 hrs. on day of greatest flow)

FORECAST POINT	FORECAST RANGE	AVERAGE
Big Hole River near Melrose	5,500 - 6,500	8,020
Ruby River above Reservoir	600 - 800	939
Gallatin River near Gateway	4,000 - 5,000	5,432
Gallatin River near Logan	4,000 - 5,500	5,488
Missouri River at Tooton	13,000 - 16,000	18,582
Belt Creek near Monarch	1,000 - 1,700	1,854
Marias River near Shelby	3,500 - 5,000	13,312
S. Fk. Musselshell above Martinsdale	700 - 900	745

\*Highly abnormal weather during the critical melting period may cause the peak to be outside the indicated range.  
Average based on 1961-80 period.

Current weather and snowpack conditions indicate peak snowmelt runoff will be below average on all unregulated streams. The Big Hole and tributaries to the Sun and Marias Rivers are expected to reach their peak around May 20 with the Gallatin and Missouri Rivers peaking about a week later.

## Missouri streamflow

### low this summer

April runoff was well above average in the Missouri headwaters with volumes in the 120 to 160 percent of average range. Most downstream tributaries had April streamflows in the near average to a little above average range.

May through September forecasts are in the 70 to 80 percent of average range for Missouri headwater streams and 80 to 90 percent of average for downstream tributaries.

Natural runoff in the Milk River system still looks bleak even though there is a good supply for the St. Mary's diversion. Storage in the Milk River drainage continues to be low.

Soils that are not snow-covered are drying rapidly from the lack of moisture and warm temperatures.

Shortages of irrigation water supplies are anticipated on most southwest streams for mid- to late season period. Shortages will also be more severe on smaller streams with lower elevation headwaters.

## SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and/or SUBWATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF LAST YEAR	Average
Beaverhead	28	50	60
Ruby	13	51	62
Big Hole	28	68	67
Boulder	14	46	53
Jefferson	83	56	63
Madison	31	65	66
Gallatin	22	58	58
Missouri Headwater	136	58	62
West-side Missouri (Toston-Cascade)	11	65	65
Smith-Belt-Arrow	11	22	72
Missouri Main-stem	22	30	69
Teton & Sun	12	173	80
Marias	6	137	86
Marias-Teton-Sun	18	152	83
Judith-Musselshell	17	68	70
Milk	10	201	90
Bear Paws	6	0	22
Missouri (Total)	203	60	66

Saskatchewan	11	160	91
St. Mary's	10	117	91

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" with respect to water supply.

STREAM or AREA	Spring Season	Late Season
Beaverhead	Fair	Poor
Ruby	Fair	Poor
Big Hole	Fair	Fair
Boulder	Fair	Fair
Jefferson	Fair	Poor
Madison	Fair	Fair
Gallatin	Fair	Poor
West-Side Missouri	Fair	Fair
Smith-Belt	Fair	Fair
Sun	Avg	Fair
Teton	Avg	Fair
Marias	Avg	Fair
Judith	Fair	Fair
Musselshell	Fair	Fair
Milk	Fair	Poor
Bear Paws	Fair	Fair
St. Mary's	Avg	Fair

## Snow melting

### early this year

The snowpack reached its season's maximum snow water content around the first week in April. Melt became quite rapid during mid-April and was followed by a fairly major storm that increased the snowpack. Since then, melt has been progressing well ahead of normal.

The May 1 snow surveys indicate less water content than on April 1 at almost all snow courses. A few locations in the southern part of the drainage have minimum of record or near record minimum snow water content for this date. In the northern part of the drainage, snowpack is generally 80 to 90 percent of average.

This early melt season appears to be 2 to 3 weeks earlier than usual.

If the present warm weather trend continues, the high country will be free of snow much earlier than usual.

# Yellowstone River Drainage

## STREAMFLOW FORECASTS

May 1, 1985

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD	
	FORECAST		FORECAST	
	THOUSAND ACRES-FT.	PERCENT OF AVERAGE	THOUSAND ACRES-FT.	PERCENT OF AVERAGE
PERIOD	MAY - SEPTEMBER		MAY - JULY	
YELLOWSTONE RIVER at Corwin Springs	1,800	82	1,918	1,944
YELLOWSTONE RIVER near Livingston	1,800	79	2,269	1,500
BOULDER RIVER at Big Timber	161	77	385	280
STILLWATER near Absarokee (1)	455	76	606	392
CLARK'S FORK RIVER near Belfry	16.0	75	606	390
ROCK CREEK near Red Lodge	46.8	79	112	86.0
INFLOW COONEY RESERVOIR near Boyd (2)	3,217	79	51.5	31.7
YELLOWSTONE RIVER at Billings	1,370	76	4,017	2,675
BIGHORN RIVER near St. Xavier (3)	1,370	76	1,833	1,240
LITTLE BIGHORN RIVER near Hardin	155	60	157	82.5
TONGUE RIVER near Decker	1,370	64	244	142
YELLOWSTONE RIVER at Miles City (4)	154	73	6,273	3,935
POWDER RIVER at Moorhead	4,710	66	233	140
YELLOWSTONE RIVER near Sidney (5)	4,710	72	6,921	4,225

- (1) Adjusted for storage in Mystie Lake.
- (2) Adjusted for storage in Cooney Reservoir.
- (3) Adjusted for storage in Buffalo Bill, Boyesen, Bull Lake, Pilot Butte and Bighorn Reservoirs.
- (4) Adjusted for storage in Bull Lake, Buffalo Bill, Boyesen, Pilot Butte, Bighorn and Tongue River Reservoirs.
- (5) Adjusted for reservoirs above in (4) and diversions into the Lower Yellowstone Canal.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

## PEAK FLOWS

(MAXIMUM MEAN DAILY Flow for 24 hrs. on day of greatest flow)

FORECAST POINT	FORECAST RANGE	AVERAGE
Yellowstone River at Corwin Springs	13,000 - 15,000	18,790
Yellowstone River at Livingston	15,000 - 18,000	21,140
Boulder River near Big Timber	3,800 - 4,500	5,332
Stillwater River near Absarokee	4,000 - 5,500	6,644
Clarks Fork River near Belfry	5,300 - 6,500	7,611
Yellowstone River at Billings	33,000 - 40,000	43,365

\*Highly abnormal weather during the critical melting period may cause the peak to be outside the indicated range.

Average based on 1961-80 period.

Based on current weather and snowpack conditions, major streams in the Yellowstone River drainage are expected to reach their peak snowmelt runoff the first few days in June and the peak flow is expected to be below average.

## April brings

### snowpack melt

Snow water content reached its seasonal maximum the first week in April. Unusually warm temperatures resulted in melt at almost all elevations. Some cooling and snow near mid-month increased the snowpack slightly and then melt resumed near the end of April.

This melt season seems to be 3 to 4 weeks earlier than normal, and if the warm temperatures continue, many high elevations will be snowfree much earlier than usual.

The snowpack is well below average in most areas.

## SUMMARY of SNOW MEASUREMENTS

RIVER BASIN and/or SUBWATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF LAST YEAR	Average
Upper Yellowstone			
ab Livingston	18	78	63
Shields	10	56	59
Boulder & Stillwater	9	73	60
Rock Creek & Clark's Fork	17	64	61
Yellowstone (ab Bighorn River)	54	68	61
Bighorn/Wyoming	30	56	54
Little Bighorn	3	50	64
Tongue	9	55	66
Powder	5	37	38
Yellowstone (Total)	98	63	59

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" with respect to water supply.

STREAM or AREA	Spring Season	Late Season
Yellowstone at Livingston	Fair	Fair
Shields	Fair	Fair
Boulder	Fair	Fair
Sweetgrass - Big Timber	Fair	Fair
Stillwater	Fair	Fair
Rock Creek	Fair	Fair
Clark's Fork	Fair	Fair
Yellowstone above Bighorn	Fair	Fair
Bighorn	Fair	Fair
Little Bighorn	Fair	Poor
Tongue	Fair	Poor
Powder	Poor	Poor
Lower Yellowstone	Fair	Fair

## Low irrigation

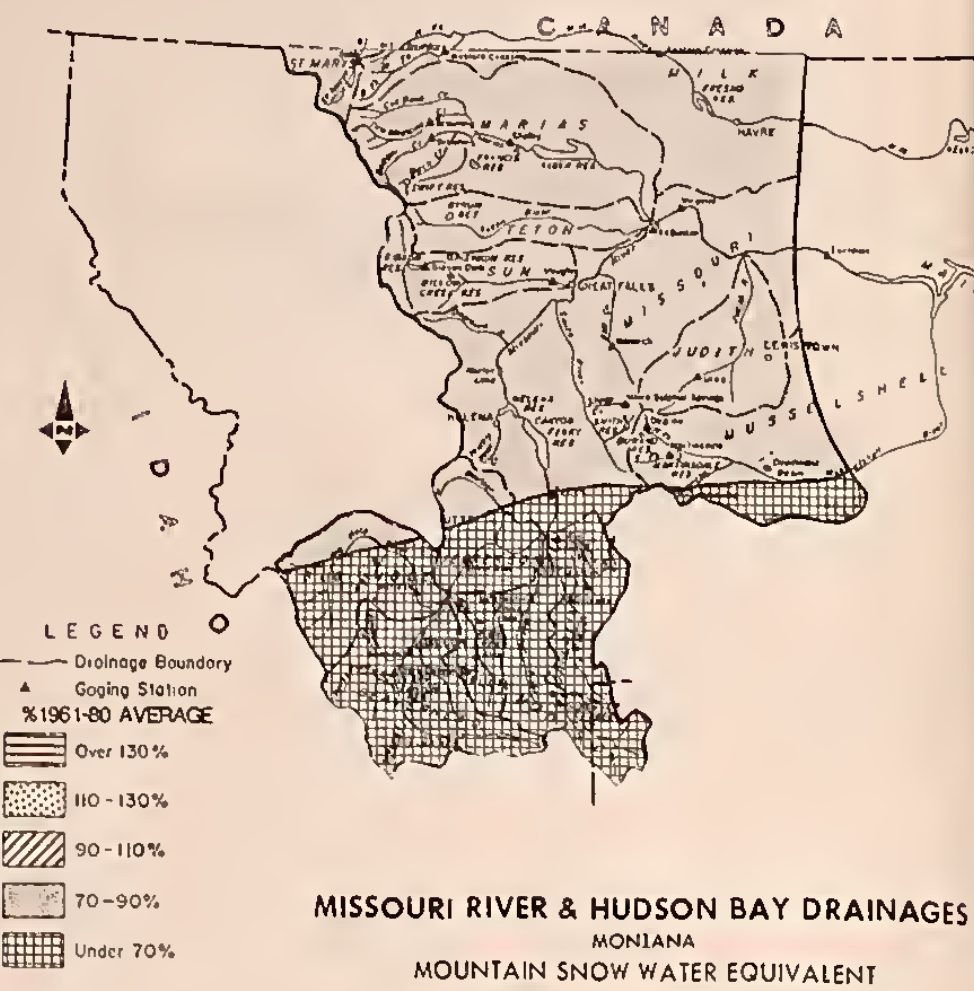
### water supplies

April runoff was a little above average in the Upper Yellowstone, near average in most of the tributary streams and a little below average in the lower Yellowstone.

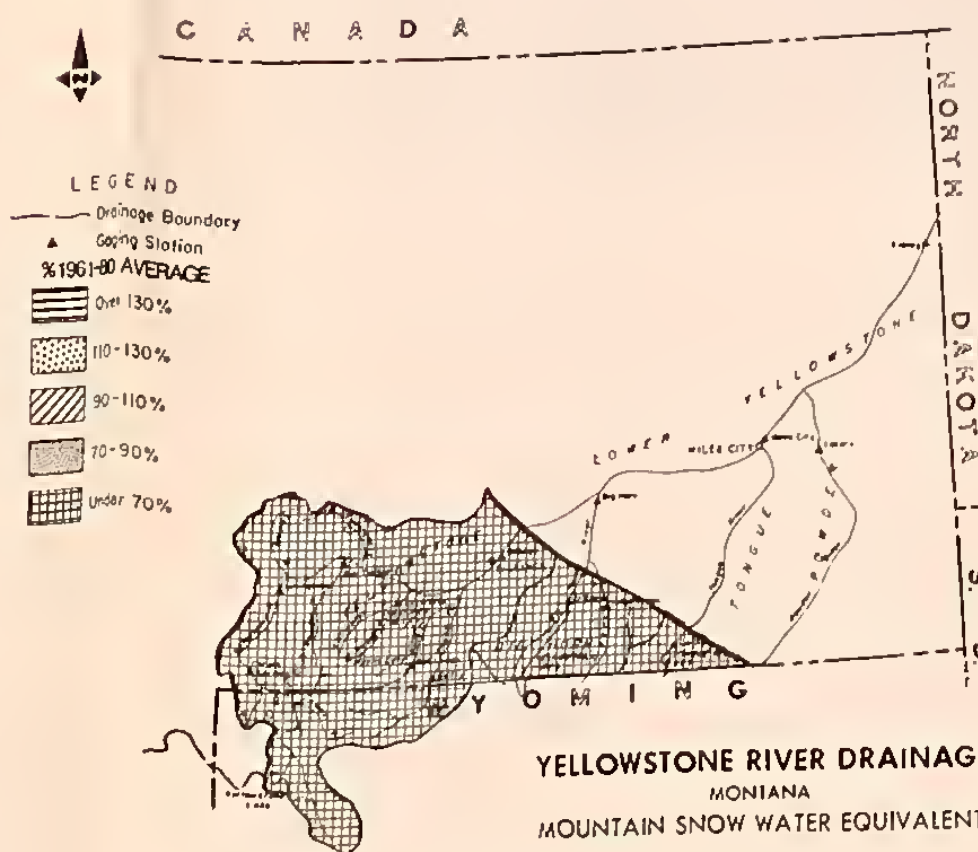
May through September forecasts are generally in the 70 to 80 percent of average range.

Bare soils are drying quite rapidly due to the lack of precipitation and warm temperatures.

Irrigation water supplies are expected to be lower than normal because of low winter snowpack and earlier than normal melt. If moisture patterns do not improve, shortages of mid- to late season irrigation supplies could be moderate to severe on some of the smaller drainages.



MISSOURI RIVER & HUDSON BAY DRAINAGES  
MOUNTAIN SNOW WATER EQUIVALENT



YELLOWSTONE RIVER DRAINAGE  
MOUNTAIN SNOW WATER EQUIVALENT







# SNOW SURVEY DATA

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-80
MONTANA						
ABUNDANCE LAKE	8800	4/29/85	43	15.3	22.5	24.4
ADROSE	6480	4/28/85	27	10.2	15.0	13.7
ARCH FALLS	7350	4/29/85	29	9.9	15.4	15.7
ASHLEY DIVIDE	4820	4/26/85	1	.4	.0	2.9
ASHLEY LAKE	4000	4/26/85	6	1.6	.0	3.0
BAOGER PASS	6900	4/30/85	82	36.9	29.8	44.2
BAOGER PASS BUTYL	6900	5/01/85	---	30.6	26.5	41.3
BALD EAGLE PEAK	5700	5/01/85	114	59.6	43.7	63.6
BALD RIDGE	7500	4/29/85	18	6.6	16.0	13.9
BANFIELD MOUNTAIN	5600	5/01/85	36	17.5	8.3	23.2
BANFIELD MOUNTAIN BUTYL	5600	5/01/85	---	15.8	9.0	17.5
BARRE CREEK	5500	4/30/85	77	39.1	29.3	47.2
BARRE HIGHWAY	4600	4/30/85	71	35.8	14.6	33.2
BARRE TRAIL	3800	4/30/85	3	1.1	.0	1.6
BARKER LAKES BUTYL	8250	5/01/85	---	15.3	18.1	17.1
BASIN CREEK	7180	5/01/85	0	.0	12.0	9.8
BASIN CREEK METAL	7180	5/01/85	---	7.9	12.2	9.6
BASSOON PEAK	5150	4/30/85	0	.0	.0	6.9
BEAGLE SPRINGS	8850	4/29/85	0	.0	13.2	8.0
BEAGLE SPGS METAL	8850	5/01/85	---	2.1	13.0	8.3
BEAR BASIN	8150	5/01/85	32	12.3	25.4	24.2
BEAR PAW SKT AREA	5200	4/29/85	0	.0	.0	5.4
BEAVER LAKE	5900	4/30/85	45	18.8	13.8	26.0
BIG CREEK	6750	5/01/85	89	45.0	43.2	52.0
BIG SKY	7700	5/01/85	28	11.5	18.4	18.1
BIG SKY MEADOW	6350	5/01/85	0	.0	5.2	4.6
BIG SNOWY	7150	4/26/85	63	24.0	29.2	26.4
BLACK BEAR	7950	4/26/85	90	39.6	40.4	44.8
BLACK BEAR BUTYL	7950	5/01/85	---	35.2	36.9	38.8
BLACK MOUNTAIN	7750	4/28/85	37	13.8	22.6	17.4
BLACK PINE	7100	4/26/85	29	9.0	10.4	14.9
BLACK PINE BUTYL	7100	5/01/85	---	7.5	13.3	15.6
BLOODY OCK	7600	4/30/85	22	8.1	13.0	14.1
BLOODY OCK BUTYL	7550	5/01/85	---	6.0	12.8	9.1
BLUE LAKE	5900	4/30/85	52	23.6	16.0	25.3
BOOTS DOTS	7750	4/29/85	5	1.8	14.6	10.2
BOULDER MOUNTAIN	7950	4/25/85	55	20.4	23.6	22.9
BOULDER MOUNTAIN BUTYL	7950	5/01/85	---	18.0	24.2	23.2
BOX CANYON	6670	4/30/85	9	2.4	6.6	8.3
BOX CANYON METAL	6700	5/01/85	---	.6	4.0	6.0
BRANHAM LAKES	8850	4/26/85	69	24.8	42.6	35.7
BRIDGER BOUL	7250	4/30/85	47	19.8	30.4	32.6
BRIDGER BOUL BUTYL	7250	4/30/85	---	17.8	30.0	30.3
BRISTOW CREEK	3900	5/01/85	0	.0	.0	1.7
BRUSH CREEK TIMBER	5000	4/29/85	10	3.3	1.5	7.7
BULL MOUNTAIN	6600	4/25/85	0	.0	5.3	3.7
CABIN CREEK	5200	4/28/85	5	1.4	.3	2.3
CALL ROAD	8050	4/29/85	25	7.7	16.2	14.2
CALVERT CREEK	6430	4/29/85	14	5.4	7.6	10.1
CALVERT CREEK BUTYL	6430	5/01/85	---	.0	1.7	2.8
CAMP MISERY	6400	5/01/85	109	52.5	58.0	53.7
MONTANA						
CAMP SENIA	7890	4/29/85	11	3.2	12.7	10.0
CARROT BASIN BUTYL	9000	5/01/85	---	22.0	33.1	33.0
CASHE CREEK METAL	7800	5/01/85	---	6.7	11.2	9.5
CEDAR GROVE	3760	5/01/85	0	.0	.0	7.1
CHESSMAN RESERVOIR	6200	4/29/85	1	.2	3.4	2.8
CHICKEN CREEK	4060	4/24/85	17	6.5	.0	3.0
CLOVER MEADOW	8600	4/29/85	33	10.8	21.0	21.0
CLOVER MEADOW METAL	8800	5/01/85	---	13.0	24.9	18.2
COLE CREEK	7850	4/25/85	38	12.5	28.4	24.2
COLE CREEK BUTYL	7850	5/01/85	---	11.3	28.2	19.0
COLLEY CREEK	6300	4/26/85	5	1.3	3.3	4.6
COMBINATION	5600	4/26/85	6	1.4	2.3	3.6
COMBINATION BUTYL	5600	5/01/85	---	.0	.7	2.6
COOKE STATION	8150	4/30/85	42	16.2	16.6	22.2
COPPER BOTTOM	5200	4/30/85	0	.0	2.0	5.8
COPPER BOTTOM BUTYL	5200	5/01/85	---	6.6	5.2	7.1
COPPER CAMP BUTYL	6950	5/01/85	---	28.0	21.2	35.9
COPPER CAMP	6950	4/30/85	49	23.0	19.5	32.4
COPPER CREEK	5700	4/30/85	14	7.0	3.6	10.9
COPPER LAKE CREEK	6100	4/30/85	40	18.4	12.2	24.2
COPPER MOUNTAIN	7700	4/25/85	21	7.0	13.6	11.8
COTTONWOOD CREEK	6400	4/29/85	22	8.4	11.0	8.3
COYOTE HILL	4200	4/26/85	13	4.0	.0	3.6
CRYSTAL LAKE	6050	4/26/85	35	14.0	15.4	13.5
CRYSTAL LAKE METAL	6050	5/01/85	---	13.0	15.9	12.4
DAG CREEK LAKE	8400	4/29/85	36	10.6	19.8	17.4
DAISY PEAK	7600	4/30/85	14	3.3	8.4	10.9
DAILY CREEK	5780	4/28/85	33	12.5	11.4	12.8
DAILY CREEK METAL	5780	5/01/85	---	1.4	7.3	8.8
DARKHORSE LAKE	8600	4/29/85	59	24.9	33.4	30.4
DARKHORSE LK. METAL	8700	5/01/85	---	17.8	28.6	30.3
DAVIS CREEK	5400	5/01/85	34	16.9	12.3	24.0
DEADMAN CREEK	6450	4/30/85	13	5.2	6.6	9.5
DEADMAN CREEK BUTYL	6450	5/01/85	---	4.3	6.6	7.4
DESERT MOUNTAIN	5600	5/01/85	28	12.9	10.2	14.6
DEVILS SLIDE	8100	4/29/85	52	18.8	28.8	28.0
DISCOVERY BASIN	7050	4/30/85	16	5.1	13.0	10.6
DIVIDE	7800	4/29/85	11	3.5	13.4	11.7
DIVIDE BUTYL	7800	5/01/85	---	8.2	15.1	12.2
DIX HILL	6400	4/28/85	0	.0	8.4	5.4
DUPUYER CREEK BUTYL	5750	5/01/85	---	9.8	4.7	---
EAST BOULDER S	9250	5/01/85	63	25.0	28.0	35.0
EAST FORK R.S.	5400	4/25/85	0	.0	.0	.7
ELK HORN SPRINGS	7800	4/29/85	0	.0	9.0	9.1
ELK PEAK	8000	5/01/85	37	13.8	19.0	20.8
EMERY CREEK	4350	5/01/85	21	9.3	7.2	8.4
EMERY CREEK BUTYL	4350	5/01/85	---	12.4	6.1	6.9
FATTY CREEK	5500	5/01/85	45	20.8	20.4	25.2
FISH CREEK	8000	5/01/85	24	6.2	13.9	12.6
FISHER CREEK	9100	4/30/85	79	32.1	34.4	44.5
FISHER CREEK BUTYL	9100	5/01/85	---	28.1	31.4	40.7
FIVE-BULL	5700	4/30/85	0	.0	.3	4.5
FLATTOP MOUNTAIN BUTYL	6300	5/01/85	---	44.5	32.9	52.8
FLEECER RIDGE	7500	4/25/85	21	6.0	9.0	9.9
FODLHEN	8280	4/29/85	32	11.8	16.4	20.0
FOUR MILE	6900	4/25/85	20	6.4	12.6	8.1
FOURTH OF JULY	3450	4/29/85	0	.0	.0	3.2

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-80
FRED BURR PASS	8000	5/01/85	52	20.0	31.4	29.8
FREIGHT CREEK	6000	4/30/85	29	11.8	8.5	15.0
FRIDAY HILL	4620	4/29/85	34	15.8	6.7	11.1
FROHNER MEADOWS	6480	4/29/85	3	1.2	7.6	6.5
FROHNER HOWS BUTYL	6480	5/01/85	---	3.7	9.1	7.6
GARVER CREEK	4250	5/01/85	4	1.4	.0	5.2
GARVER CREEK BUTYL	4250	5/01/85	---	2.9	.0	4.3
GIBBONS PASS	7100	4/25/85	44	18.0	24.7	24.0
GOAT MOUNTAIN	7000	4/29/85	22	7.2	2.4	10.3
GOLD STONE	8100	4/30/85	36	13.6	17.6	19.6
GRASSHOPPER	7000	5/01/85	5	1.8	5.1	5.6
GRAVE CREEK	4300	5/01/85	22	10.9	5.3	15.1
GRAVE CRK BUTYL	4300	5/01/85	---	11.7	3.2	8.1
GRIFFIN CREEK DIVIDE	5150	4/30/85	10	3.9	3.5	7.9
GUNSIGHT LAKE	6300	5/01/85	76	37.8	32.4	43.9
HAND CREEK	5030	4/29/85	24	8.6	6.8	9.4
HAND CREEK BUTYL	5030	5/01/85	---	8.7	7.0	9.3
HAWKINS LAKE	6450	5/01/85	66	29.5	20.6	35.4
HAWKINS LAKE BUTYL	6450	5/01/85	---	24.2	19.0	33.1
HEART LAKE TRAIL	4800	4/29/85	49	22.4	11.3	18.4
HECHEE DAM	6550	4/30/85	0	.0	10.8	7.6
HELL ROARING DIVIDE	5770	4/30/85	64	29.0	24.9	32.4
HERRIG JUNCTION	4850	4/24/85	57	22.6	14.7	22.3
HOLBROOK	4530	4/28/85	0	.0	.0	2.2
HOOD MEADOW	6600	4/29/85	8	3.0	11.6	12.3
HOODOO BASIN	6050	4/29/85	112	52.9	42.8	54.5
HOODOO BASIN BUTYL	6050	5/01/85	---	45.8	36.7	47.8
HOODOO CREEK	5900	4/29/85	99	44.4	39.4	50.7
ICEBERG LAKE HO 3	5600	4/25/85	78	30.1	16.6	32.9
INDEPENDENCE	7850	4/30/85	33	12.3	13.4	19.3
INTERGAARD	6450	4/26/85	17	5.2	9.4	8.4
JAHNKE LAKE TRAIL	7200	4/30/85	16	6.4	8.6	9.2
JOHNSON PARK	6450	4/30/85	0	.0	.9	3.1
JOSEPHINE LOWER NO 9	4900	4/24/85	47	15.8	7.6	17.7
KEELER CREEK	3300	5/01/85	0	.0	.0	1.5
KINGS HILL	7500	4/30/85	36	13.9	15.0	16.7
KIMANIS CAMP	3720	4/29/85	0	.0	.0	.5
KRAFT CREEK METAL	4750	5/01/85	---	4.0	1.2	7.4
LAKE CREEK	6100	4/29/85	0	.0	6.4	3.8
LAKEVIEW CANYON	6930	4/25/85	28	8.7	9.6	12.6
LAKEVIEW RIDGE	7400	4/25/85	22	6.4	9.2	10.5
LAKEVIEW RIDGE METAL	7400	5/01/85	---	4.6	12.8	8.9
LEHMI PASS	7480	4/29/85	0	.0	13.2	7.4
LEHMI RIDGE	8100	4/29/85	14	5.0	15.5	10.6
LEHMI RIDGE BUTYL	8100	5/01/85	---	5.8	15.5	10.6
LICK CREEK	6860	4/29/85	17	5.3	12.6	10.8
LICK CREEK BUTYL	6860	5/01/85	17	.8	12.4	8.3
LITTLE PARK	7400	5/01/85	29	10.0	18.6	18.4
LOGAN CREEK	4300	4/29/85	0	.0	.0	2.7
LONG MOUNTAIN	8880	5/01/85	42	17.0	29.0	27.0
LOST HORSE	5940	4/26/85	74	29.8	29.6	34.9
LOST SOUL	4800	5/01/85	10	4.7	.0	8.9
LOWER TWIN	7900	4/25/85	53	18.6	30.6	25.6
LOWER TWIN METAL	7900	5/01/85	---	15.1	27.7	23.8
LUBRECHT FLUME	4680	4/29/85	0	.0	.0	.2
LUBRECHT FLUME BUTYL	4680	5/01/85	---	.0	.0	.6
LUBRECHT FOREST NO 3	5450	4/29/85	0	.0	1.0	3.9
LUBRECHT FOREST NO 4	4650	4/29/85	0	.0	.0	.3
LUBRECHT FOREST NO 6	4040	4/29/85	0	.0	.0	.1
MONTANA						
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-80
LUBRECHT HYDROPLOT	4200	4/29/85	0	.0	.0	.8
MAIDSON PLATEAU	7750	4/25/85	59	15.6	21.8	23.6
MAIDSON PLT BUTYL	7750	4/25/85	---	23.0	19.0	24.3
MANY GLACIER	4900	4/30/85	35	14.8	8.0	9.8
MANY GLACIER BUTYL	4900	5/01/85	---	6.6	.1	7.6
MARIAS PASS	5250	4/28/85	37	16.1	7.6	16.8
MAYNARD CREEK	6210	4/30/85	30	12.0	16.0	18.0
MAYNARD CREEK BUTYL	6210	4/30/85	---	9.8	13.2	14.4
MIDDLE HILL CREEK	7850	4/26/85	29	9.9	26.0	18.5
HILL CREEK	7500	4/26/85	18	5.6	10.8	13.1
MINERAL CREEK	4000	4/28/85	31	13.4	3.6	12.3
MONUMENT PEAK	8850	4/30/85	57	20.7	24.7	31.2
MONUMENT PEAK METAL	8850	5/01/85	---	17.2	21.0	29.0
MOUTON RESERVOIR	6850	5/02/85	0	.0	6.5	3.2
MOUNT ALLEN NO 7	5700	4/24/85	113	42.1	32.7	47.7
MOUNT LOCKHART	6400	4/30/85	48	20.0	15.6	23.3
MT LOCKHART BUTYL	6400	5/01/85	---	18.9	15.0	24.3
MUOD LAKE	7650	4/29/85	31	13.5	16.7	21.1
MULE CREEK	8300	4/29/85	37	12.0	13.0	11.5
MULE CREEK METAL	8300	5/01/85	---	13.9	13.8	17.6
NEVAQA CREEK	6480	4/30/85	21	9.5	11.2	12.0
NEVAQA CREEK METAL	6480	5/01/85	---	12.2	8.5	13.8
NEWTON MOUNTAIN	5860	4/29/85	71	33.8	24.4	38.9
NEZ PERCE CAMP	5650	4/25/85	30	11.2	12.4	12.7
NEZ PERCE CMP BUTYL	5650	5/01/85	---	8.7	12.7	10.2
NEZ PERCE CREEK	6600	4/25/85	0	.0	4.9	4.5
NEZ PERCE PASS	6570	4/25/85	22	8.2	17.8	15.9
NOISY BASIN	6040	5/01/85	105	52.5	56.7	52.4
NOISY BASIN BUTYL	6040	5/01/85	---	47.5	52.3	44.8
NORTH FORK ELK CREEK	6250	4/29/85	15	5.7	11.8	10.5
N.FORK ELK CRK BUTYL	6250	5/01/85	---	4.0	10.2	10.0
NORTH FORK JOCKO	6330	5/01/85	70	34.5	39.4	48.3
NORTH MEADOW	7500	4/25/85	27	8.8	14.7	10.7
NORTHEAST ENTRANCE	7350	4/30/85	4	1.6	4.1	7.3
N.E. ENTRANCE BUTYL	7350	5/01/85	---	.0	5.5	5.3
NOTCH	8500	4/29/85	34	12.3	28.0	19.6
OPHIR PARK	7150	4/28/85	40	15.2	19.6	18.1
PALISADE CREEK	8250	4/29/85	56	26.8	28.8	33.1
PETERSON MEADOWS	7200	4/30/85	22	8.0	15.0	11.7
PETERSON MOW BUTYL	7200	4/30/85	---	9.3	15.0	12.2
PICKET PIN O	9450	5/01/85	39	15.5	27.5	30.6
PICKFOOT CREEK	6650	4/25/85	13	4.3	5.3	8.0
PICKFOOT CRK METAL	6650	5/01/85	---	1.0	6.8	10.0
PIEGAN PASS NO 6	5500	4/24/85	101	37.1	26.2	41.0
PINE CREEK	5930	4/30/85	62	28.0	--	--
PINE CREEK BUTYL	5930	5/01/85	---	26.7	17.6	27.5
PIPESTONE PASS	7200	4/25/85	14	4.8	7.0	5.8
PLACER BASIN F	8830	5/01/85	37	14.5	21.5	24.0
PLACER BASIN METAL	8830	5/01/85	---	13.2	18.7	20.4
POORMAN CREEK	5100	5/01/85	59	30.3	21.5	32.5
POORMAN CRK BUTYL	5100	5/01/85	---	31.4	19.2	31.1
POURCUPINE BUTYL	6500	5/01/85	---	.0	5.4	2.7
POTOMAGETON PARK	7150	4/29/85	0	.0	11.6	11.4
PTARMIGAN	5800	4/25/85	87	32.6	21.9	40.0
RED MOUNTAIN	6000	5/01/85	32	13.4	10.9	19.4
RED TOP	5260	4/29/85	60	27.8	18.2	31.9







# Columbia River Drainage

## STREAMFLOW FORECASTS May 1, 1985

BASIN, STREAM and FORECAST POINT	THIS YEAR				PAST RECORD				THIS YEAR				PAST RECORD			
	FORECAST		PAST RECORD		FORECAST		PAST RECORD		FORECAST		PAST RECORD		FORECAST		PAST RECORD	
	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE	THOUSAND ACRES	PERCENT OF AVERAGE
PERIOD	MAY - SEPTEMBER				MAY - JULY				MAY - JUNE				MAY - JUNE			
KOOTENAI RIVER below Libby Dam (1)	5430	82	5,092	6,590	4590	82	4,146	5,569								
FISHER RIVER near Libby	192	99		194	177	99		178								
YAK RIVER near Troy	360	86		418	339	86		395								
KOOTENAI RIVER at Leona (1)	6540	83	5,932	7,838	5600	83	4,994	6,734	4390	83	3,679	5,288				
INFLOW HOULTON RESERVOIR near Butte (Million Gallons)					180	81	188	223	159	81	180	197				
HARK SPRINGS CREEK AT MEYERS DAM near Anaconda (2)	36.0	82		44.2	28.5	80		35.3								
FLINT CREEK near Southern Cross (3)	12.0	74		16.1	9.6	74		13.0								
FLINT CREEK below Boulder Creek (4)	52.0	76		68.3	39.5	76		52.0								
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5)	8.1	61	15.8	13.2	7.6	61	14.5	12.4								
MIDDLE FORK ROCK CREEK near Philipsburg	58.0	78		74.0	51.7	78		66.3								
NEVADA CREEK near Finn	12.0	63		19.0	10.8	63		17.2								
BLACKFOOT RIVER near Bonner	700	79		881	620	79		786	525	79		664				
CLARK FORK RIVER above Milltown (6)	569	79		709	474	79		601	390	80		490				
CLARK FORK RIVER above Missoula	1270	80	1,367	1,590	1109	80	1,162	1,387	925	80	956	1,154				
WEST FORK BITTERROOT RIVER near Conner (7)	127	79		160	115	79		146								
BITTERROOT RIVER near Darby	429	82		524	385	81		476	330	81		408				
SKALKAH CREEK near Hamilton	41.5	78		53.0	35.7	78		45.8								
EURHT FORK CREEK near Stevensville (8)	27.5	79		35.3	32.9	79		30.2								
BITTERROOT RIVER at Missoula (9)	1070	79		1,358	980	79		1,238	825	79		1,046				
CLARK FORK RIVER below Missoula	2340	79		2,948	2090	80		2,625	1750	80		2,200				
CLARK FORK RIVER at St. Regis	3070	79	3,289	3,880	2710	79	2,879	3,451	2290	79	2,382	2,894				
NORTH FORK FLATHEAD RIVER near Columbia Falls	1520	87		1,742	1360	87		1,562	1130	87		1,301				
MIDDLE FORK FLATHEAD RIVER near West Glacier	1500	88	1,148	1,702	1360	88	1,068	1,546	1135	88	918	1,287				
SOUTH FORK FLATHEAD RIVER near Columbia Falls (10)	1810	89	1,570	2,029	1690	89	1,448	1,893	1100	89	1,237	1,636				
FLATHEAD RIVER at Columbia Falls (10)	4900	87	4,154	5,404	4545	89	3,714	5,117	3840	89	3,004	4,317				
SHAW RIVER near Big Fork	525	88		599	452	88		514								
FLATHEAD RIVER near Polson (11)	5740	88	4,846	6,522	5220	88	4,363	5,956	4400	88	3,545	5,002				
CLARK FORK RIVER near Plains (11)	9320	86	8,672	10,821	8370	86	7,692	9,739	6990	86	6,235	8,127				
THOMPSON RIVER near Thompson Falls	201	93		217	175	93		189								
PROSPECT CREEK at Thompson Falls	110	97		113	100	97		104								
CLARK FORK RIVER at Whitehorse Rapids (12)	10500	88		11,935	9370	87		10,711	7770	87		8,930				

- (1) Adjusted for storage in Lake Kootenai.
- (2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.
- (3) Adjusted for storage in Georgetown Lake, diversions from and pumping to Silver Lake.
- (4) Sun Flint Creek at Maxville and Boulder Creek at Maxville.
- (5) Sun of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall.
- (6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.
- (7) Adjusted for storage in Painted Rocks Reservoir.
- (8) Adjusted for diversion into Sunset Highway Canal.
- (9) Difference in observed flow Clark Fork above and below Missoula.
- (10) Adjusted for storage in Hungry Horse Reservoir.
- (11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.
- (12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoir.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

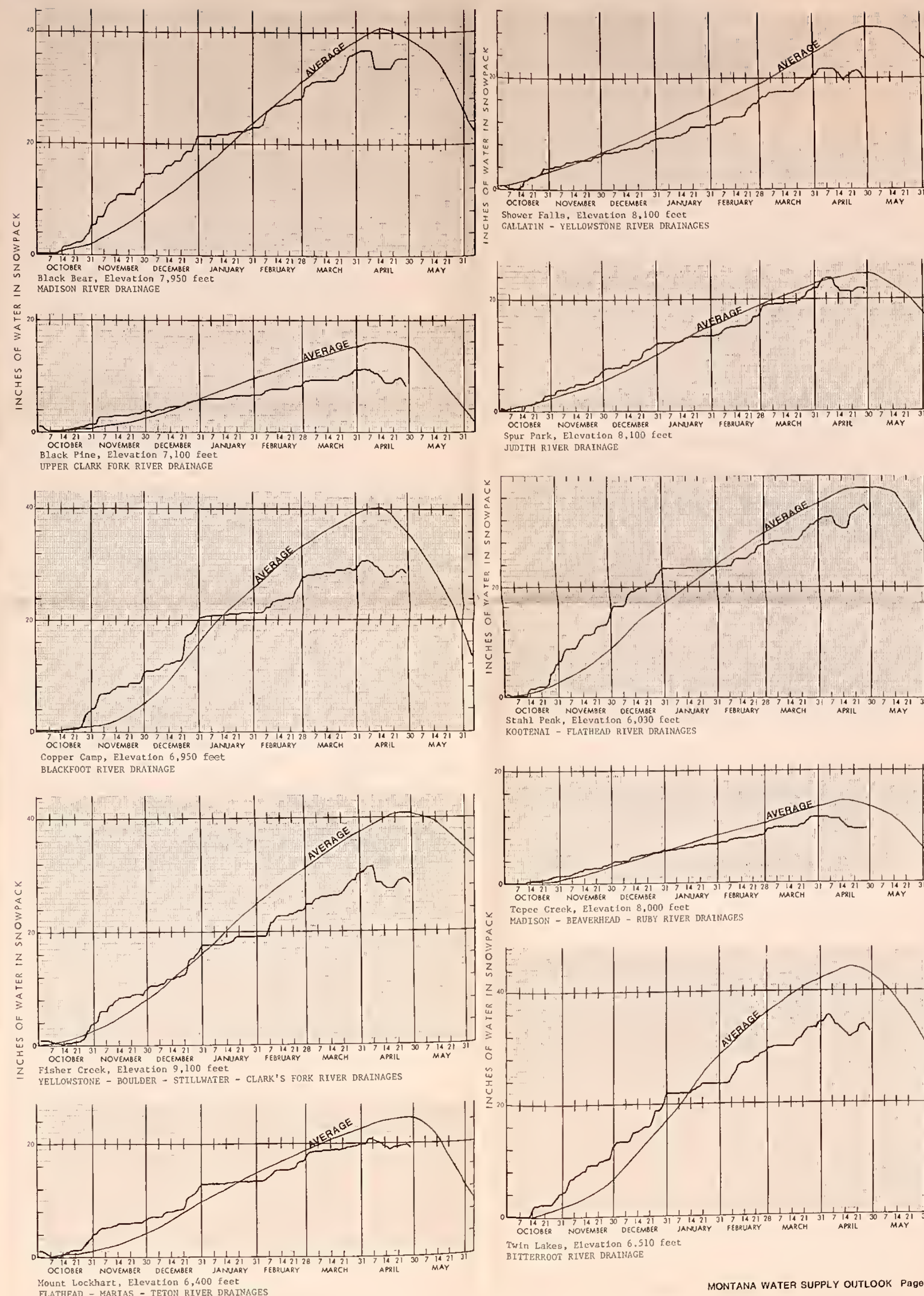
## Columbia snowpack is below average

Only a few high elevation snow courses showed increases in water content during April. Melt rates were quite high for this early in the season.

The northern drainages continue to show better snowpack with water contents at higher elevations in the 80 to 90 percent of average range. The Bitterroot, Clark Fork and Blackfoot have a little lower snowpack with most snow courses showing 70 to 80 percent of average water content.

SUMMARY OF SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)			
RIVER BASIN and/or SUB-BASIN	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average
East Kootenay/BC	20	79	81
Kootenai/Montana	31	150	87
Kootenai above Bonners Ferry...	51	115	85
Little Bitterroot	9	141	53
N. Fk. Flathead..	12	135	90
M. Fk. Flathead..	12	139	88
S. Fk. Flathead..	13	100	92
Swan .....	11	97	89
Flathead .....	56	114	89
Stillwater & Whitefish.....	9	129	84
Clark Fork above Blackfoot .....	43	62	64
Blackfoot .....	22	90	70
Upper Clark Fork above Missoula ..	65	70	66
Bitterroot .....	20	87	78
Lower Clark Fork below Missoula ..	18	132	91
Clark Fork (Total w/o Flathead)...	103	90	77
Pend O'Reille (Clark Fork & Flathead) .....	159	100	82
Columbia (Pend O'Reille & Kootenai) .....	210	103	83

## SNOW PILLOW DATA



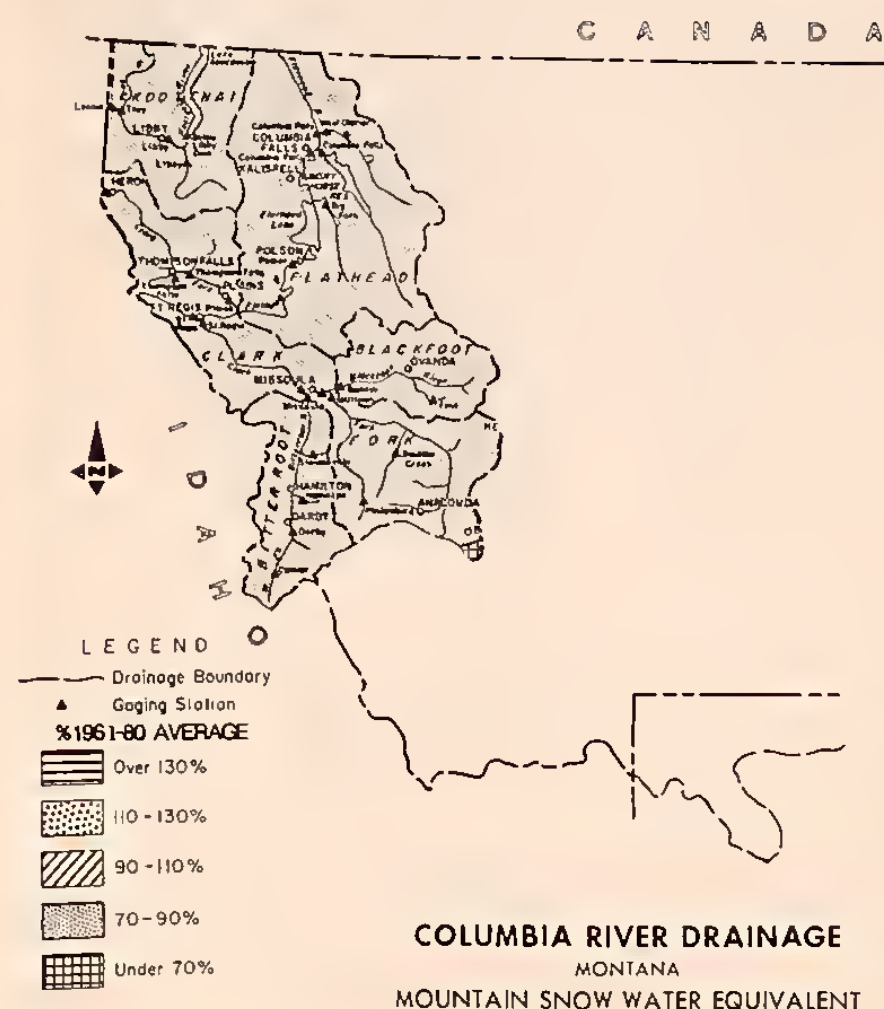
## Early runoff highly variable

April runoff was 10 to 20 percent below average in the Upper Clark Fork and Blackfoot, near average to a little above on the Lower Clark Fork, about 15 percent above average in the Bitterroot and North Fork Flathead, and 25 to 30 percent above average for the Middle and South Fork Flathead. Smaller streams with lower elevation headwaters generally produced well above average runoff.

May through September runoff is forecast to be around 70 to 80 percent of average in the Clark Fork drainage. In the Flathead River drainage, runoff is expected to be 10 to 15 percent below average. The Fisher, Thompson and Prospect are all forecast to have near average streamflows.

Most soils that are snowfree are drying rapidly due to lack of precipitation and warm temperatures.

With the early melt, shortages of mid- and late season water supplies can be expected on streams not having stored water.

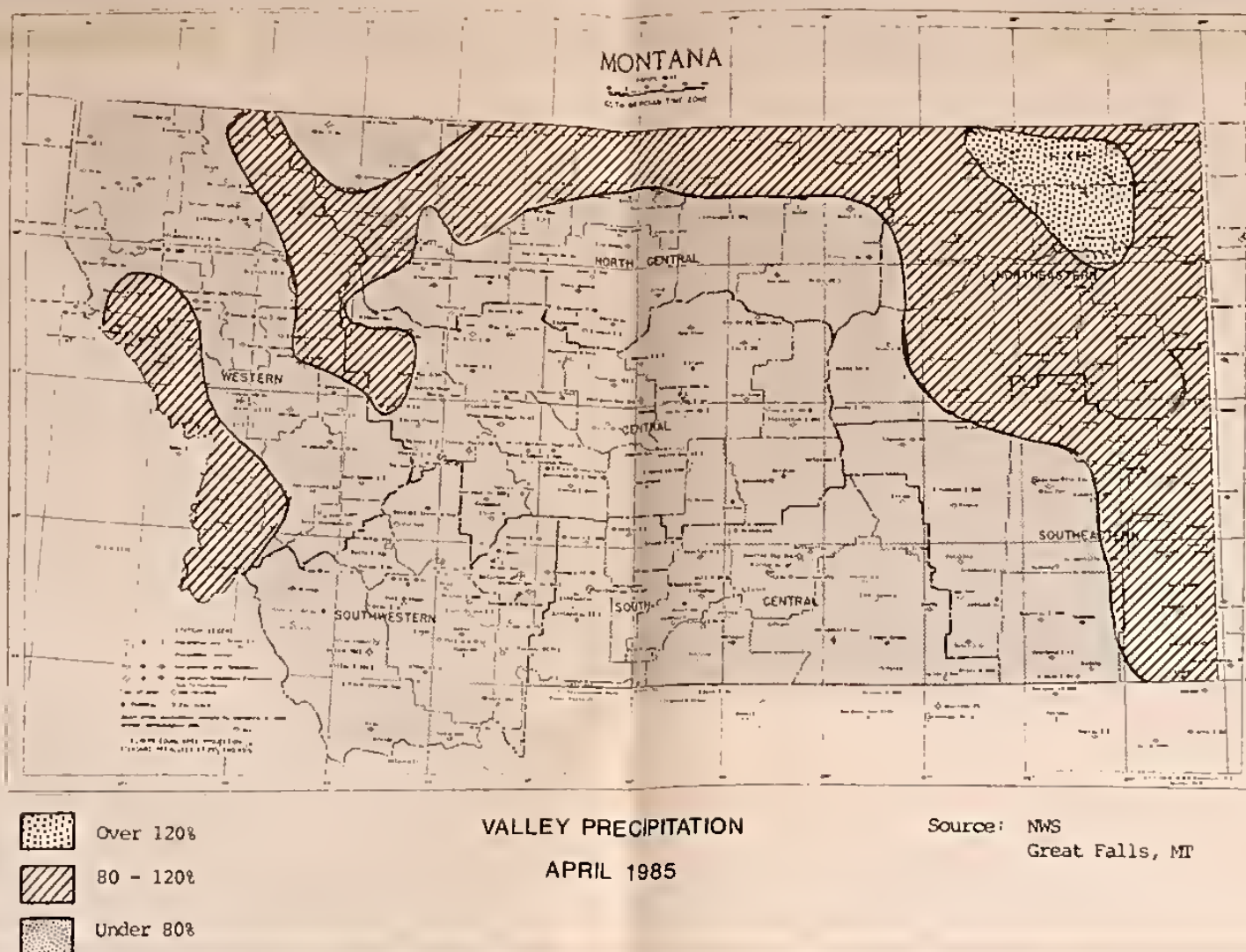


COLUMBIA RIVER DRAINAGE  
MONTANA  
MOUNTAIN SNOW WATER EQUIVALENT

PEAK FLOWS (HUNDRED CUBIC FEET PER SECOND)		
FORECAST POINT		
	Forecast Range	Average
Blackfoot River near Bonner	6,500 - 8,500	10,332
Clark Fork River above Missoula	11,000 - 14,000	16,804
Bitterroot River near Darby	5,000 - 6,500	6,312
Clark Fork River below Missoula	20,000 - 28,000	32,016
Clark Fork River at St. Regis	28,000 - 35,000	40,305
N. Fk. Flathead near Columbia Falls	14,000 - 18,000	22,086
M. Fk. Flathead near West Glacier	15,000 - 19,000	23,534

WATER SUPPLY OUTLOOK		
Expressed as "Poor, Fair, Average, Excellent" with Respect to Usual Supply		
Stream or Area	Spring Season	Late Season
Tobacco .....	Avg	Avg
Little Bitterroot....	Avg	Avg
Mission Valley .....	Avg	Avg
Flint Creek .....	Fair	Fair
Upper Clark Fork .....	Fair	Fair
Nevada Creek .....	Fair	Fair
Blackfoot .....	Fair	Fair
West-side Bitterroot	Fair	Fair
East-side Bitterroot	Fair	Fair
Bitterroot River .....	Fair	Fair
Lower Clark Fork .....	Fair	Fair





Alpine flowers are replacing the mountain snowpacks earlier than usual.

#### AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

##### GOVERNMENT AGENCIES

###### Canada

Department of the Environment  
Atmospheric Environment Service  
Water Management Service  
British Columbia Ministry of Environment  
Inventory and Engineering Branch, Hydrology Section  
Alberta Environment  
Technical Services Division

###### Federal

Department of the Army - Corps of Engineers  
Department of Agriculture - Forest Service  
Department of Commerce - National Environmental Satellite Service  
Department of Interior - National Weather Service  
Bureau of Indian Affairs  
Fish and Wildlife Service  
Geological Survey  
National Park Service  
Bureau of Reclamation  
Department of Energy - Bonneville Power Administration

##### STATE AGENCIES

Montana Conservation Districts  
Montana Department of Fish, Wildlife and Parks  
Montana Department of Natural Resources and Conservation  
Montana State University - Agricultural Experiment Station  
University of Montana - School of Forestry

##### PRIVATE ORGANIZATIONS

The Anaconda Company  
Big Sky of Montana  
Butte Water Company  
Flathead Valley Community College  
Montana Power Company  
Pondera County Canal & Reservoir Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

#### RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH April 30, 1985

BASIN OR STREAM	RESERVOIR	USABLE CAPACITY	USABLE STORAGE		
			THIS YEAR	LAST YEAR	AVERAGE
COLUMBIA					
Kootenai	Koocanusa	5,748.2	2,167.0	2,658.0	1,864.0
Flathead	Hungry Horse	3,451.0	2,067.0	2,221.0	1,982.0
	Flathead Lake	1,791.0	845.0	798.2	932.7
	Camas (4)	45.2	26.2	32.4	27.9
	Mission Valley (8)	100.3	43.4	67.4	49.3
Clark Fork	Georgetown Lake	31.0	26.0	27.8	23.7
	Lower Willow Creek	4.9	3.1	5.1	2.7
	Nevada Creek	12.6	9.2	11.1	10.2
	Noxon Rapids	334.6	138.0	313.9	250.1
Bitterroot	Painted Rocks	31.7	---	---	22.0
	Como	34.9	20.4	24.4	18.1
MISSOURI					
Beaverhead	Lima	84.0	67.6	71.5	54.7
	Clark Canyon	257.2	163.3	196.7	157.5
Ruby	Ruby	38.8	37.8	40.0	35.2
Madison	Hebgen Lake	377.5	289.6	266.2	229.7
	Ennis Lake	41.0	30.3	21.8	36.3
Gallatin	Middle Creek	8.0	4.7	4.2	4.4
Missouri	Canyon Ferry	2,043.0	1,536.0	1,584.0	1,499.0
	Hauser & Helena	61.9	63.0	63.0	59.3
	Helena Valley	9.2	7.7	8.3	7.6
	Lake Helena	10.4	10.9	10.9	9.8
	Holter Lake	81.9	74.9	80.5	70.8
	Fort Peck Lake	18,910.0	15,610.0	16,140.0	15,250.0
Smith	Smith River	10.6	11.5	11.6	9.1
	Newlan Creek	12.4	9.8	9.7	9.1
Musselshell	Bair	7.0	3.2	4.4	6.2
	Martinsdale	23.1	8.1	17.5	12.1
	Deadman's Basin	72.2	54.0	69.2	54.3
Sun	Gibson	99.1	73.8	60.6	50.6
	Willow Creek	32.2	14.2	27.8	23.7
	Pishkun	32.0	21.5	29.8	26.4
Marias	Lower Two Medicine	11.9	---	---	10.0
	Four Horns	19.2	---	---	12.9
	Swift	30.0	13.7	18.9	18.3
	Lake Frances	111.9	27.6	47.9	76.9
	Elwell (Tiber)	1,347.0	717.0	699.7	569.5
Milk	Beaver Creek	3.5	1.1	3.2	2.6
	Fresno	127.2	40.5	57.4	103.3
	Nelson	66.8	24.0	43.0	43.9
HUDSON BAY					
St. Mary's	Lake Sherburne	64.3	8.8	6.9	21.6
YELLOWSTONE					
Stillwater	Mystic Lake	21.0	0.9	0.0	2.4
Clark's Fork	Cooney	27.4	22.8	19.8	18.5
Tongue	Tongue River	68.0	36.4	24.4	40.0
Bighorn	Bighorn Lake	1,356.0	851.8	849.2	633.1



